Original Research Article

CONSTRAINTS RELATED TO PRODUCTION AND MARKETING OF FRESHWATER FISH ROHU (*Labeo rohita)* IN CUTTACK DISTRICT OF ODISHA

Abstract: Aquaculture can be considered as a rapidly growing sector in many Indian states including Odisha. The impressive overall upward trend in fish production is likely to continue in future years as there are plenty of unutilized or underutilized fishery resources in the state. In spite of the growing popularity of aquaculture in the state, fish farmers have been experiencing financial, social and technical constraints in fish farming and in marketing practices. Cuttack district of Odisha was selected for the study.98 respondents from 4 villages were selected based on the population of the villages. The present study was conducted in the year 2021-2022 years.This paper examines the constraints faced by the fish farmers while producing and marketing of the freshwater fish Rohu(*Labeo rohita*) which reveals that damage due to natural calamities in production and frequent price fluctuations in marketing are the major constraints expressed by the farmers.

Keywords: constraints, freshwater fish, Rohu(*Labeo rohita*),ranking.

Introduction

Through the ages, fishing has been one of the earliest occupations known to man. It has grown from crude and simple beginning into a complex industry with modern equipment and installations. The commodities that man derived from the oceans, seas, lakes, and rivers are more numerous. Fishing has been an important source of livelihood for many Filipino for many years. It is one of the oldest occupation of mankind.Fisheries is a promising sector playing an important role for development of economic ambiance in the country. India as a maritime country has wide water resources laying both in inland and marine sector which are being utilized for capture and culture fisheries.Out of total global aquaculture production India accounts for 7.58 percent and second largest fish producing country in the world. The fish production in India has reached incomparable of 14.16 million metric tons during 2019-20.The fisheries sector shares 1.24 percent to the GVA and 7.28 percent to the agricultural GVA.(Source:ES 2021-22 Vol-1-2)

A serving of 100 grams of fish every day could meet half the total protein required by the human body. About 90 to 100 percent of fish protein is digestible. Hence fish foods are included in many special diets for people with digestive disorders and convalescent ulcer. The vitamin A content of fish liver B 26, B 12, Biotin and Niacin and minerals such as phosphorus, potassium and iron help the normal growth of human body. Apart from this aquaculture provides

excellent opportunities for employment and income generation, especially in the more economically backward rural areas. Sixty million people are directly engaged, part time or full time, in primary production of fish, either by fishing or in aquaculture, supporting the livelihoods of 10-12% of world population. (Source:SIFF 2010)

India is blessed with a vast coastal line harbouring rich marine and non-marine living resources. Millions of people are dependent on these resources for sustenance and commercial exploitation. India has a long coastal line of about 8,119km; a continental shelf of 0.5 million sq km; an extensive Exclusive Economic Zone (EEZ) of 2.02 million sq km; 1.24 million ha of brackish water area, 1,91,024km length of rivers and canals; 3.15 million ha of reservoirs; 2.25 million ha of ponds and tanks; 0.82 million ha of beels, oxbow lakes and derelict waterbodies; 0.24 million ha of flood plain wetlands; 0.29 million ha of estuaries, 1.65 million ha of mangroves; swamps, lagoons, etc. (Ayyappan and Diwan 2004).

In India, two types of aquaculture are practiced viz., freshwater aquaculture and brackish water aquaculture. Freshwater aquaculture involves the breeding of freshwater fish like carp, Catla, Rohu, Magur, freshwater prawn, freshwater pearl culture and ornamental fish farming.

Odisha(formerly Orissa), an eastern Indian state on the coast of Bay of Bengal is one of the major fish producing maritime states and currently ranks 4th in total fish production after Andhra Pradesh, West Bengal and Gujarat. The state Odisha in India has almost 11% of water area of the country which contributes 4.75% of inland fish production.(Source:Directorate of Fisheries, Odisha) The total population of Odisha is 4.37 crores with 3.49 crores living in rural belt and 0.70 in urban area, Ganjam records the largest rural population while Khordha the highest urban inhabitants. There are thirty districts and 314 Blocks in the State. Out of 30 districts seven belongs to coastal district with fishermen population of 8,78,190 (Inland) and 7,47,606 (Marine). (Source-2011 Census:Odisha)

Odisha has an abundance of fisheries resources, both inland and marine, and is home to the largest brackish water lagoon (Chilika lake) in Asia and the second largest coastal lagoon in the world. The coastal plains are rich in fertile silt, which are deposited by the seven major rivers flowing into the Bay of Bengal. These are Subarnarekha, Budhabalanga, Baitarani, Brahmani, Mahanadi Rushikulya and Vasandhara. The river systems besides, useful for resources, 0.418 million ha of brackish water resources and 480 Kms. of coastline and continental shelf area of 24,000 Km2, which provides excellent scope for fisheries development. (Source-District Fishery Office,Cuttack)

According to Fishery survey of India (FSI) the Fisheries potential of Odisha is 5.14

lakhs MT. About 2.95 % population (10.84 lakh) depends upon fisheries for their livelihood. Of them, 7.51 lakh depend on inland fisheries and 3.33 lakh on marine fisheries. The fisheries sub-sector contributed about 6% to the GSDP share of the Agriculture Sector. (Directorate of Fisheries Odisha)

Being the one of the most prominent inland fish producer in the country, fish production in Odisha has many problems and constraints. The major problems faced by the Odisha fish farmers were price fluctuations, lack of proper electricity, sudden climatic changes and farms situated in low-lying areas of coastal districts were prone to floods during rainy seasons. Setting this aside lack of knowledge about various aspects like quality seeds, fish feed and appropriate knowledge about available subsidy schemes and mostly there's no awareness about insurance coverage when in case of losses. There's also been a labour scarcity, transportation and lack of preservation techniques which make the farmer to sell fishes at low cost. A few studies conducted on fish farming business in other Ihdian states have also revealed similar constraints (Go swami and Sathiadhas, 2000).The present study aims to reveal the major constraints faced by the fish farmers in Odisha which is one of the major fish producing state in the country. It contributes about 6.6 and 1.58 lakh tonnes in the years of 2019 and 2020 respectively through inland fisheries.(Source:Handbook of Fisheries Statistics 2020)

Research Methodology

Ex post facto study or after-the-fact research design was adopted for the study as it describes the characteristics that are being studied.The present study was conducted in Cuttack district of Odisha in the year of 2022. Multistage randomised sampling has been adopted for the study which involves in selection of Nischintakoili block among 14blocks because the selected species i.e.Rohu is extensively grown in this specific area.Out of total villlages four villages were selected purposively i.e Bandhakatia, Bandhupur,Isaniberhampur,Nagaspur. 98 respondents of different categories were selected randomly and data has been collected with the help of well structured and pre tested interview schedule related to the constraints in the region. To interpret the results and to show the ranking among all constraints Garrett's ranking technique has been followed.

Tools of Analysis

Garrett ranking technique was applied to analyse and rank various constraints as experienced and unveiled by respondent farmers in performing their fish farming business. The respondents were asked to rank the factors that have probably restrained their performance in obtaining expected outcome in fish farming. The most common problems in fish farming in the region are: damage due to natural calamities, delay in cash payment,high cost of labor, high initial investment, frequent price fluctuations,. The order of the merit

given by the respondents to each problem has been converted into ranks using the following formula for production and marketing in two different tables:

$$\text{Percent position} = (100(R_{ij} - 0.5))/N_j$$

where,

Rij = Rank given for the ith variable by jth respondents

Nj = Number of variable ranked by jth respondents

The percent position of each rank was converted into scores by referring tables given by Garrett and Woodsworth (1969).

Objective of the Study:

1.To identify different constraints faced by fish farmers in production and marketing in the study

Results and Discussion

Constraints faced during production of inland fish Rohu (*Labeo rohita*)

Table 1: Constraints related to production of Rohu(Labeo rohita) in different size of farm groups

Sl no	Particular	Garreate Score(%)	Rank
1	High cost feed	51.357	IV
2	Damage due to natural calamities	61.041	I
3	High cost of labor	56.643	II
4	Frequent disease attack	47.796	IX
5	High initial investment	52.918	III
6	High cost of manure	43.969	XI
7	High cost of fertilizer	50.071	VI
8	High cost of seed	48.857	VIII
9	Non-availability of labor during peak period	50.388	V
10	High cost of medicines	46.622	X
11	Lack of irrigation facilities	43.367	XII
12	Lack of information about government scheme and subsidies	49.377	VII

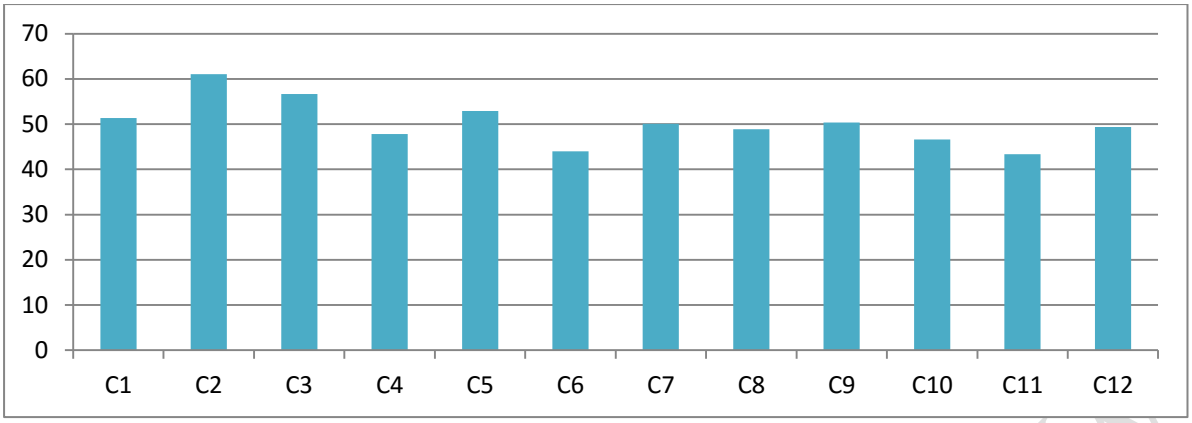

Fig.1. Constraints related to production of Rohu(Labeo rohita) in different size of farm groups (C1-Constraint 1,C2- Constraint 2…….C12-Constraint 12)

Table 1 shows that constraints faced by the different size of farms group in cultivation of Rohu. Most of the respondents expressed that major constraint was identified that damage due to natural calamities has been awarded with rank (I) Damage due to natural calamities, followed by High cost of labor with rank II, High initial investment with rank III, High cost feed with rank IV, Non-availability of labor during peak period with rank V, High cost of fertilizer with rank VI, Lack of information about government scheme and subsidies with rank VII, High cost of seed with rank VIII, Frequent disease attack with rank IX, High cost of medicines with rank X, High cost of manure with rank XI, Lack of irrigation facilities has been awarded with last rank .

Table 2: Constraints related to Marketing of Rohu (*Labeo rohita*) fish in different Size of Farms Group

Sl no	Particular	Garreate Score(%)	Rank
1	High commission charges	45.9898	V
2	High transportation cost	48.7449	IV
3	Frequent price fluctuations	74.0408	I
4	Lack of cooperatives in marketing societies at village level	59.7245	III
5	Lack of cold storage, refrigerated vehicle facilities and good road for quick market	44.6122	VI
6	Lack of proper infrastructure in market	41.0714	VII
7	Weighing loss during transportation	38.3367	VIII
8	Delay in cash payment	68.7959	II

9	High mortality of fish	28.6838	IX

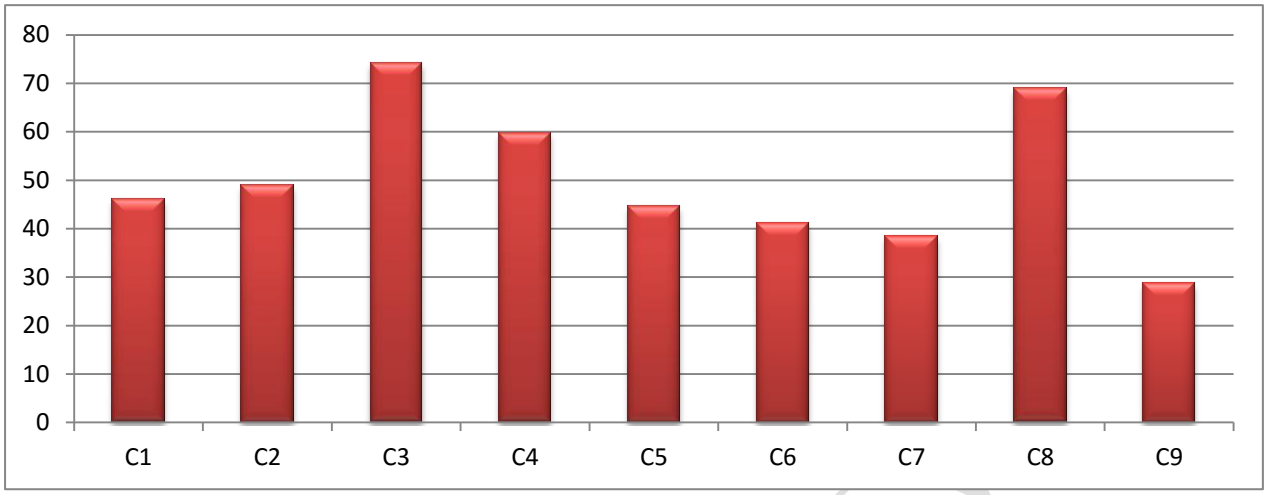

Fig.2.Constraints related to Marketing of Rohu (*Labeo rohita*) fish in different Size of Farms Group (C1-Constraint 1,C2- Constraint 2…….C9-Constraint 9)

Table 2 shows that constraints faced by the different size of farms group in marketing of Rohu. Most of the respondents expressed that major constraint was identified that frequent price fluctuations which has been awarded with rank I, followed by Delay in cash payment with rank II, Lack of cooperatives in marketing societies at village level with rank III, High transportation cost with rank IV, High commission charges with rank V, Lack of cold storage, refrigerated vehicle facilities and good road for quick market with VI, Lack of proper infrastructure in market with rank VII, Weighing loss during transportation with rank VIII and High mortality of fish with last rank IX.

Major findings of the study:

Table 1. reveal the major constraints faced by the farmers related to cultivation of as damage due to natural calamities and followed by other constraints.

Table 2. reveal the major constraints faced by the farmers related to marketing as frequent price fluvtuations and followed by other constraints.

Conclusion

Findings of the present study reveal that major constraints as damage due to natural calamities like flood during production which contributes about one third of the production cost of freshwater fish and frequent price fluctuations when there is glut in the market was the marketing constraint faced by the fish farmers. As 85.71 percent of total 98 respondents expressed that the above mentioned constraints as most effecting factors during production and marketing of freshwater fish. Hence government should consider resolving these constraints.

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